

氣候 Climate-  
智慧城市 Smart City:  
大家 Are you  
裝備前行 Ready?



黃錦星 Wong Kam-sing  
環境局局長 Secretary for the Environment

1 Planet Living Principle  
地球生活原則

2°C limit ( Paris Agreement )  
內(巴黎協定)

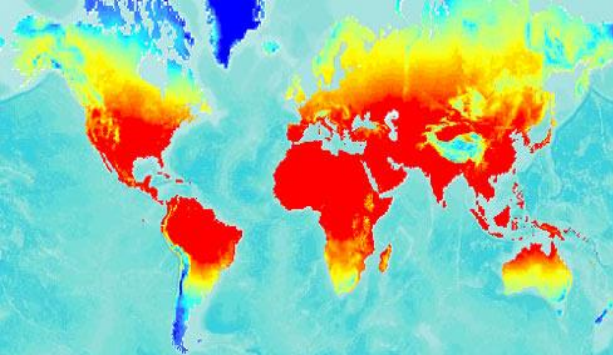
3 Climate Ready Challenges  
氣候行動挑戰

4 Decarbonizing Priorities  
低碳轉型重點 + 4Ts

5 Tons Per-Capita CO<sub>2</sub>e  
噸人均碳排量 ( 2020 )



綠色 ■ 低碳轉型  
Green, Decarbonizing Transformation



# 1 Planet Living Principle 地球生活原則







## Paris Agreement

*The Parties to this Agreement,*

*Being Parties to the United Nations Framework Convention on Climate Change, hereinafter referred to as "the Convention",*

*Pursuant to the Durban Platform for Enhanced Action established by decision 1/CP.17 of the Conference of the Parties to the Convention at its seventeenth session,*

*In pursuit of the objective of the Convention, and being guided by its principles, including the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances,*

*Recognizing the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge,*

*Also recognizing the specific needs and special circumstances of the least developed countries, especially those that are particularly vulnerable to the adverse effects of climate change, as provided for in the Convention,*

*Taking full account of the specific needs and special situations of the least developed countries with regard to funding and transfer of technology,*

*Recognizing that Parties may be affected not only by climate change, but also by the impacts of the measures taken in response to it,*

*Emphasizing the intrinsic relationship that climate change actions, responses and impacts have with equitable access to sustainable development and eradication of poverty,*

*Recognizing the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change,*

*Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities,*

*Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity,*

*Recognizing the importance of the conservation and enhancement, as appropriate, of sinks and reservoirs of the greenhouse gases referred to in the Convention,*

*Noting the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of "climate justice", when taking action to address climate change,*

*Affirming the importance of education, training, public awareness, public participation, public access to information and cooperation at all levels on the matters addressed in this Agreement,*

*Recognizing the importance of the engagements of all levels of government and various actors, in accordance with respective national legislations of Parties, in addressing climate change,*

# 2°C 内 (巴黎協定) limit ( Paris Agreement )

COP21/CMP11

## Paris France



### 改善發電燃料組合



### 建築物節能

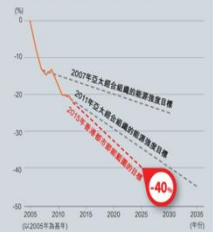


### 城市綠化



- 更好的景觀網絡
- 增加生物多樣性和種植本地物種 / 都市農耕
- 研究「藍綠」建設以改善環境質素

### 制定減低能源強度目標



### 綠色交通



### 轉廢為能



# 3

## Climate Ready Challenges 氣候行動挑戰

33°C+  
更多酷熱天氣日數和熱夜數目

更少下雨的日子  
但平均降雨強度增加

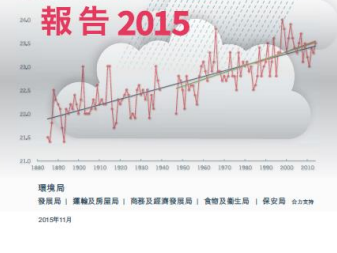
BLACK 黑  
更多極端降雨事件

更多極端多雨年份  
但出現極端少雨年份的風險不減

全球海平面上升  
導致各地包括香港出現海岸變化

由熱帶氣旋引致的風暴潮威脅增加

# 香港 氣候 變化 報告 2015



## Mitigation 減緩

## Adaptation 適應

## Resilience 應變

<p>生物多樣性 Biodiversity</p>	<p>建築環境與實體基礎設施 Built environment and physical infrastructure</p>	<p>商業和工業 Business and industry</p>	<p>能源供應 Energy supply</p>
<p>金融服務 Financial services</p>	<p>食物資源 Food resources</p>	<p>人體健康 Human health</p>	<p>水資源 Water resources</p>

# 香港 氣候 變化 報告 2015



環境局  
發展局 | 運輸及房屋局 | 商務及經濟發展局 | 食物及衛生局 | 保安局 © 2015  
2015年11月

## Mitigation 減緩

### MAJOR MITIGATION MEASURES

#### Revamping Electricity Fuel Mix

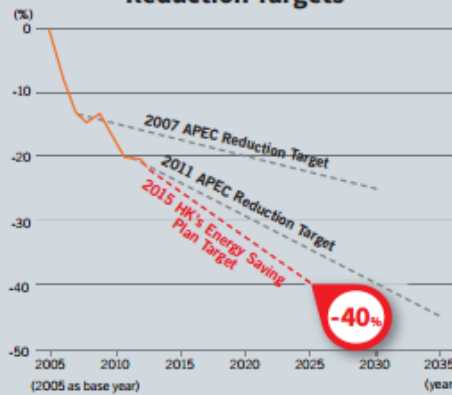


Reduce coal usage

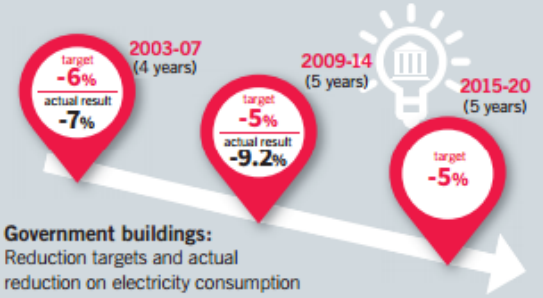


Use cleaner fuels (e.g. natural gas) develop RE and distributed power

#### Setting Energy Intensity Reduction Targets



### Practicing Energy Saving in Buildings



Green building standards, design and construction



Better air conditioning performance



More energy efficient electrical appliances



Improve building management



Extend life span of buildings

#### Greening the City



#### Better landscape networks

Enhance biodiversity and native planting / urban agriculture

Explore blue-green infrastructures to improve external environmental qualities

#### Greening Transportation

promote electric and energy efficient vehicles and cleaner fuel



Extend rail and prioritise public transport



Energy saving across transport sector



Promote energy efficient vehicles and cleaner fuels



Improve pedestrian experience

#### Turning Waste-to-Resources



Implement waste reduction, reuse and recycling plans



Recover energy from waste treatment, including organic waste



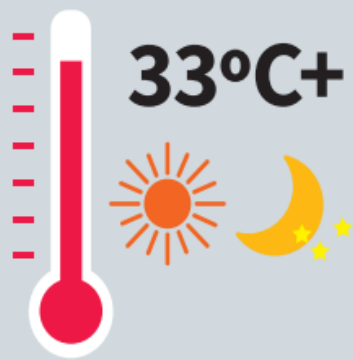
Maximise use of landfill gases



Capture energy from waste water treatment



# HONG KONG'S CLIMATE IN THE 21ST CENTURY



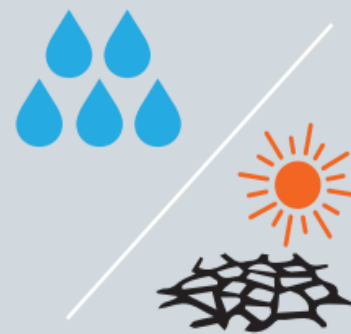
More very hot days  
and hot nights



Fewer rain days but  
average rainfall intensity  
will increase



More extreme  
rainfall events



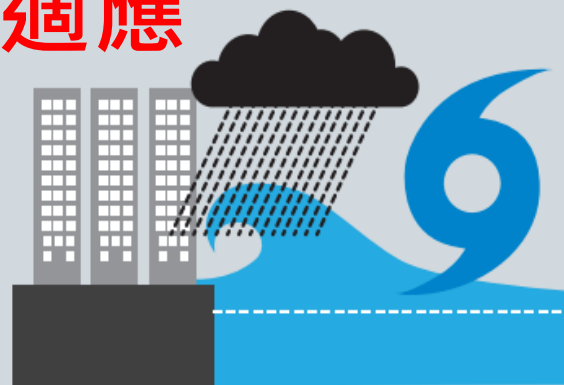
More extremely wet years  
but risk of extremely  
dry years will remain

## Adaptation

## 適應



Global sea level rise will lead to  
coastal changes all over the world,  
including Hong Kong



Threat of storm surges associated  
with tropical cyclones will rise



# 全民慳神 全民節能

## Be Hanson Energy Saving for All 2018

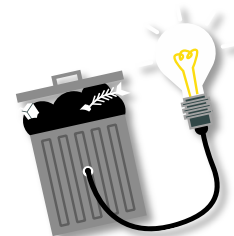
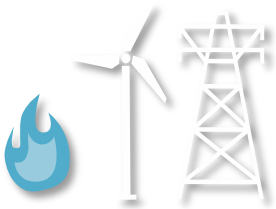
### 4 Decarbonizing Priorities 4 低碳轉型重點 + 4Ts

Cleaner Fuel Mix  
**潔淨能源**

Low Energy Building  
**節能建築**

Low Carbon Transportation  
**低碳出行**

Waste Management + WtE  
**減廢 + 轉廢為能**





# ENERGY SAVING PLAN

For Hong Kong's Built Environment  
2015~2025+



Environment Bureau in collaboration with  
Development Bureau  
Transport and Housing Bureau  
May 2015

TARGET

Year  
2025

## ENERGY INTENSITY

Hong Kong to achieve energy intensity reduction by 40 % by 2025 using 2005 as the base

-40%

Be "Energy Aware" and "Energy Wise"



## 4 Decarbonizing Priorities 4 低碳轉型重點 + 4Ts

Timeline  
訂時間表

Target  
訂立目標

Transparency  
開放透明

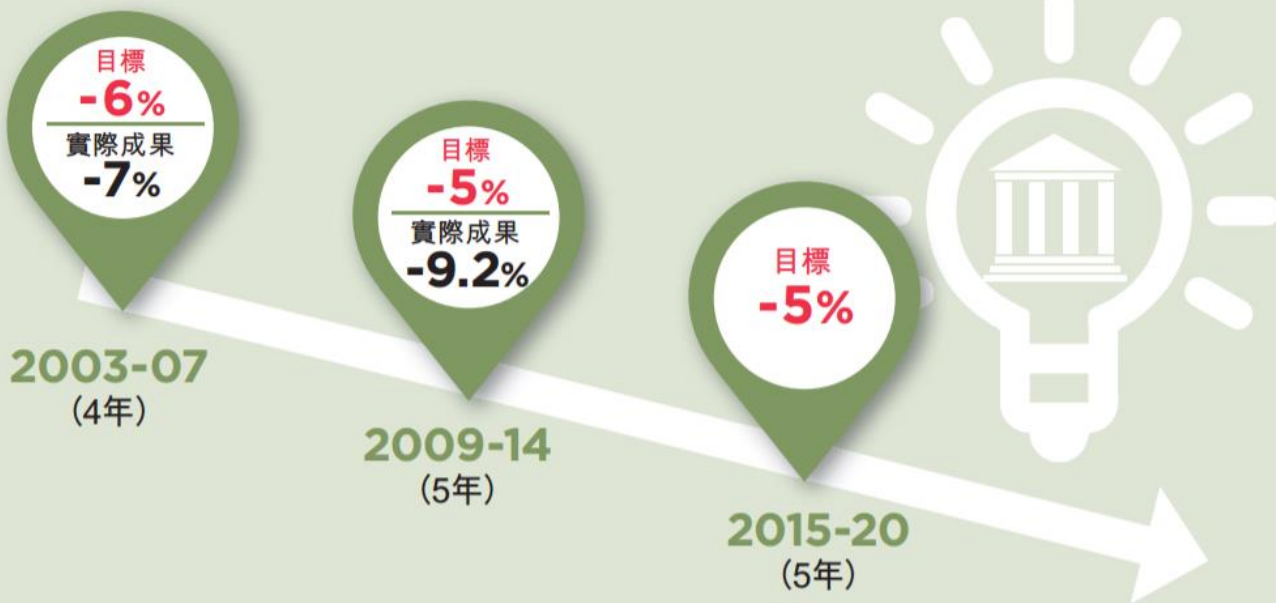
Together  
共同參與

# ENERGY SAVING PLAN

For Hong Kong's Built Environment  
2015~2025+



## 政府建築物節電目標及實際節電成果



**Timeline**  
訂時間表

**Target**  
訂立目標

**Transparency**  
開放透明

**Together**  
共同參與

住宅用電  
發單日期(日-月-年)  
22-03-16

由 22-01-16 至 22-03-16  
共 61 日用電量

按金 \$600.00

電力費用  
Energy Charge  
\$277.84

燃料調整費  
Fuel Cost Adjustment  
\$82.13

其他  
Others  
-\$51.97

應繳總數

\$308.00

繳款限期  
06-04-16

上次繳費\$310.00  
已於03-02-16收到

用電級別	每度(¢)	度數	費用(\$)
首 400度	82.2	338	277.84
小計		338	\$277.84

費用(\$)	其他:
277.84	節能回扣(每度15.2¢)
	上期零數撥來
\$277.84	零數撥入下次
	小計

燃料調整費:  
每度 24.3¢ x 338 = \$82.13

過去兩個月: 您比最節能同類家居的用電量少 8%。



特別好



良好



比平均用電量多

您的家居



最節能同類家居



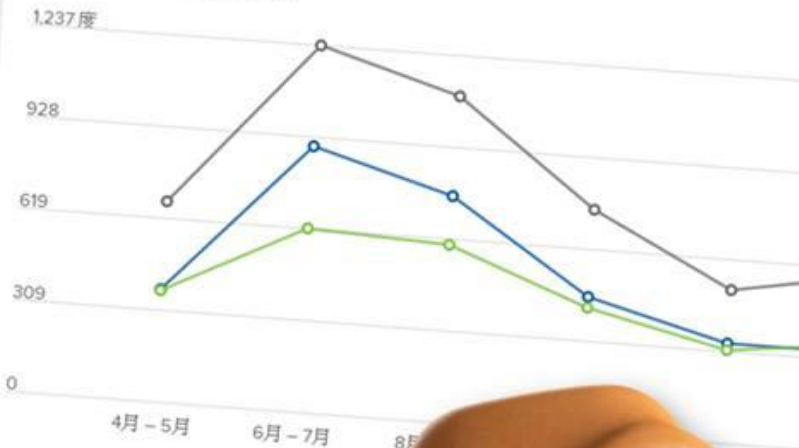
同類家居



主頁 我的用電情況 自訂節能計劃 特選節能貼士

過往用電記錄 用電分佈圖 賬單比較

2015年 04月 - 2016年 03月  
同類家居比較



同類家居 用量





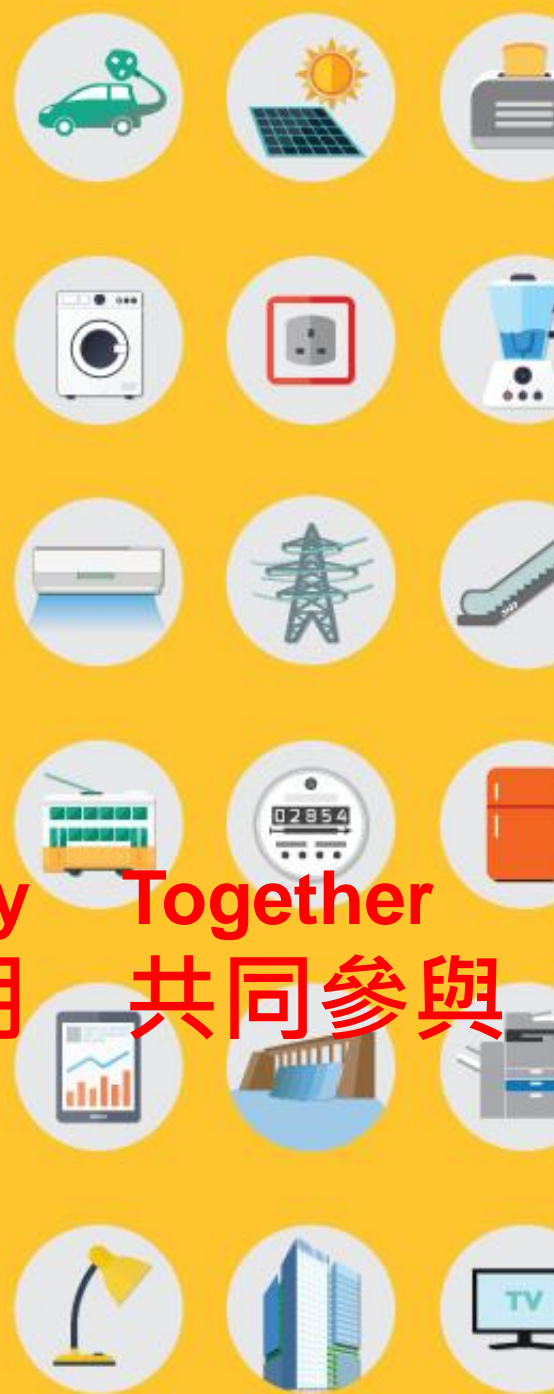
# 電力市場 未來發展 公眾諮詢

**Timeline**  
**訂時間表**

**Target**  
**訂立目標**

**Transparency**  
**開放透明**

**Together**  
**共同參與**





# 香港 氣候 變化

報告 2015



環境局

發展局 | 運輸及房屋局 | 商務及經濟發展局 | 食物及衛生局 | 保安局 全力支持

2015年11月

2005

CO<sub>2</sub>  
Intensity  
碳強度



50  
~60%

2020



5 Tons Per-Capita CO<sub>2</sub>e  
噸人均碳排量 (2020)

A graphic with a green background and a circular arrow. Inside the circle, the text "CO<sub>2</sub> neutral by 2050?" is written in white.

CO<sub>2</sub>  
neutral  
by 2050?

2 Tons Per-Capita CO<sub>2</sub>e

Behavioural / **Built Environment** / Economic / Technological

衣食住行金融創科學研...

by 2020

5 Tons Per-Capita CO<sub>2</sub>e

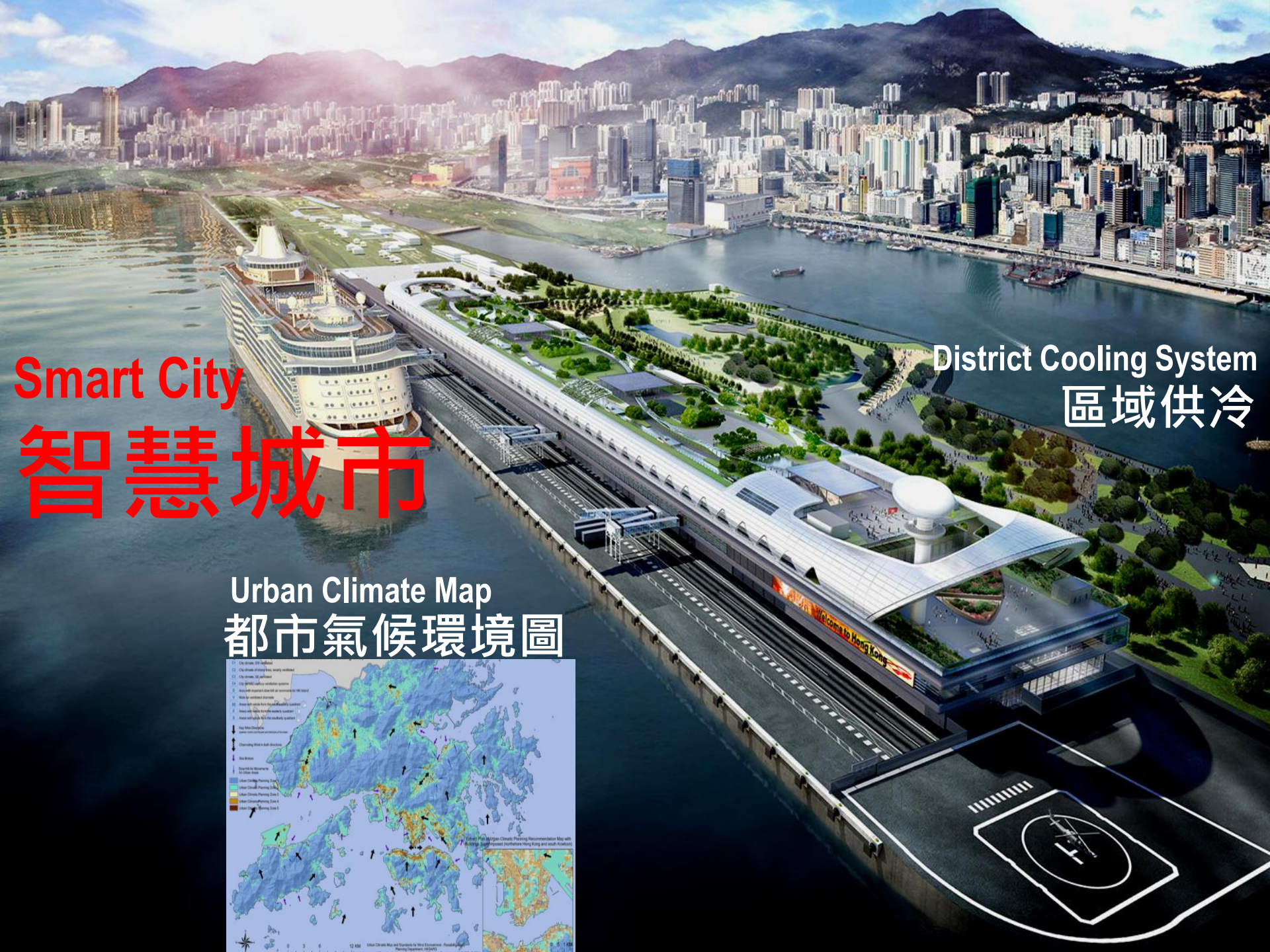
綠色 ■ 低碳轉型  
Green, Decarbonizing Transformation



Compact City

緊湊都市

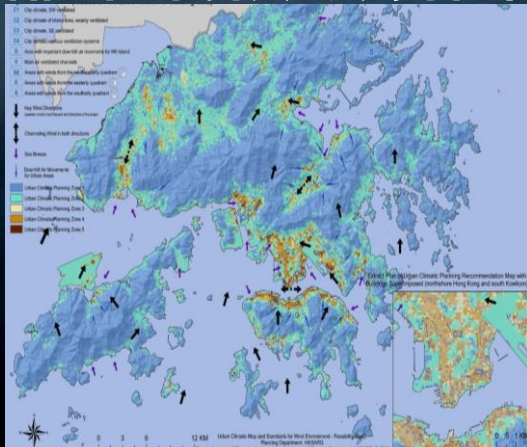




# Smart City 智慧城市

District Cooling System  
區域供冷

Urban Climate Map  
都市氣候環境圖







HKGBC  
BEAM Plus  
綠建環評





An aerial photograph of a modern building complex. The building features a large, multi-sectioned roof covered in solar panels. In front of the building is a large, circular green courtyard with a paved walkway and several trees. A group of people is gathered in a paved plaza area to the right of the building. The surrounding area includes other buildings and a street with cars.

# Zero Carbon Building 零碳建築





Greenest School on Earth 2013

全球最綠學校





能源 · Energy  
轉換 · Transformation  
社區 · Community



RE Technology

再生能源

T · PARK

Our Environmental Education Centre features recreational and educational facilities to the public.

[Book Your Visit](#)





環境局  
Environment Bureau

# 氣候變化

持份者參與論壇

Climate Change

Climate  
Ready@HK

氣候變化香港行動



1 Planet Living Principle  
地球生活原則

2°C limit ( Paris Agreement )  
內(巴黎協定)

3 Climate Ready Challenges  
氣候行動挑戰

4 Decarbonizing Priorities  
低碳轉型重點 + 4Ts

5 Tons Per-Capita CO<sub>2</sub>e  
噸人均碳排量 ( 2020 )



綠色 ■ 低碳轉型  
Green, Decarbonizing Transformation





Climate  
Ready@HK

氣候變化 香港行動

Together  
共同參與